

INVENTOR: HAYWOOD et al.
Serial No. 10/533,617

Remarks

The Examiner objected to Claim 12 as being an improper multi-dependent claim. Claim 12 has been amended to overcome the Examiner's objection. The Applicant respectfully requests that claim 12 now be considered on its merits.

Claims 1-8 and 15-17 were rejected under 35 U.S.C. 103(a) as being obvious over Jurkiewicz in view of Robinson. The Applicant respectfully traverses this rejection. Assuming *arguendo* that the Examiner's combination of Jurkiewicz and Robinson is appropriate, that combination still fails to disclose or even teach all of the claim limitations in the instant application.

First, the Examiner appears to argue that the combination of Jurkiewicz and Robinson disclose irradiating "skin" that is shielded by a sunscreen composition or other skin preparation. Specifically, the Examiner states that:

Jurkiewicz et al teach EPR (i.e., ESR) detection of ascorbate free radicals in UV-irradiated skin (see abstract). A sample of human skin was irradiated with UV radiation comprising UVA wavelengths, either unshielded or shielded with a shield such as a filter (see page 919, third full paragraph), and the ascorbate radical EPR signal was determined. Jurkiewicz et al. also teach irradiating a sample to which the photoprotective agent Desferal has been topically applied, and with which a 305 nm UV cutoff filter was used (page 921, first paragraph).

Contrary to the Examiner's assertion, Jurkiewicz does not teach irradiating shielded skin. As is explained in detail in the attached declaration of one of the instant inventors, a PhD specializing in research involving the study of skin damage by ultraviolet light and the role of free radicals in skin cancer, the filters described at page

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919 of Jurkiewicz do not shield the skin from UVA radiation as is claimed in the instant application. See Paragraphs 4 and 5 of the attached declaration. Furthermore, as is discussed in detail in Paragraphs 6-8 of the attached declaration, the use of Desferal and the 305nm cutoff filter described at page 921, first paragraph of Jurkiewicz fails to disclose, and in fact teaches the antithesis of shielding skin in the manner claimed in the instant invention. The Desferal experiment of Jurkiewicz deliberately failed to shield the Desferal-coated skin sample from UVA to see what the result would be as a means for studying the interaction of an iron chelator with skin heme iron (see Paragraphs 7 and 8 of the attached declaration).

The Examiner herself admits that Jurkiewicz fails to disclose the use of a photoprotective agent in the UVA range. To overcome this deficiency, the Examiner improperly combines the disclosure of Jurkiewicz with the UVA absorbing sunscreen of Robinson. Nevertheless, this combination can only be accomplished through improper hindsight through the Examiner's improper conclusion that Jurkiewicz discloses irradiating shielded skin. As is discussed above, the Jurkiewicz discloses the antithesis of shielding skin from UVA, as the entire purpose of Jurkiewicz was to expose unshielded skin to UVA. Thus, a person of ordinary skill in the art would not be motivated to substitute either the filters or the photoprotective agent (Desferal) of Jurkiewicz with the sunscreen of Robinson, as doing so would negate Jurkiewicz's purpose to expose unshielded skin to UVA.

The Examiner further admits that Jurkiewicz fails to disclose the claimed step of determining a quantitative measure of the effectiveness of sunscreen. As is discussed

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in detail in paragraphs 9 through 13 of the attached declaration, Jurkiewicz fails to disclose, teach or even suggest the possibility of determining a quantitative measure of the effectiveness of sunscreen in the manner claimed in the instant application.

Jurkiewicz fails to disclose that there is a quantitative reduction in ascorbate radical signal intensity in proportion with the reduction in radiation exposure (see Paragraph 10 of the attached declaration). Moreover, Jurkiewicz fails to disclose enough information to allow, or even suggest that ESR spectra from more than one skin sample be compared quantitatively (see paragraph 11 of the attached declaration).

To overcome the deficiency of Jurkiewicz, the Examiner states that "comparing the data obtained between a sample and its comparable reference is generally conventional and well within the capacity of one of ordinary skill in the art, as substantiated by the Applicant's remarks on page 14 of the specification".

The relevant passage on page 14 reads as follows:

"The means for determining a quantitative measure of the effectiveness of the sunscreen composition or other skin preparation in reducing the exposure of human skin to UVA radiation, by comparison of the levels of ascorbate radical production in the shielded and reference skin samples, preferably comprises electronic signal processors and conventional associated electronic apparatus adapted to measure the differential signal height between the samples and to display the result as a readout and/or printout in generally conventional manner. The provision of such apparatus and associated controlling software will be well within the capacity of one of ordinary skill in this art, and does not require further explanation".

This passage merely states that **providing the apparatus, once one has been taught the invention**, is within the capacity of a person of ordinary skill in the art. It in no way

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indicates that disclose the claimed step of determining a quantitative measure of the effectiveness of sunscreen would be obvious. Contrary to the Examiner's unsubstantiated assertion, prior to the present invention, there was no understanding that ESR data could be used comparatively and quantitatively in the in the manner currently claimed.

As the combination of prior art relied upon by the Examiner fails to disclose or teach each and every limitation of the claimed invention, the Applicant respectfully requests that the Examiner's rejection under 35 U.S.C. 103(a) be withdrawn.

Reconsideration of the application respectfully is requested. The foregoing amendment and remarks are believed to be responsive to every matter raised in the office action. If, however, some matter has been overlooked, an opportunity to correct the oversight would be appreciated.

Respectfully submitted,



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